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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/622,247

07/18/2003

Sheldon C. P. Lim

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3131

30402 7590 03/30/2007

WILLIAM STOFFEL

PMB 455

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PHILADELPHIA, PA 19103-7502

EXAMINER

HUYNH, PHUONG

ART UNIT

PAPER NUMBER

2857

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

03/30/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/622,247	LIM, SHELDON C. P.	
	Examiner	Art Unit	
	Phuong Huynh	2857	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 October 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7-27 is/are allowed.
- 6) ☒ Claim(s) 1-6 and 28-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claim 1 should be objected to because of the following informalities:

At line 7, limitation "the processes" lacks proper antecedent basis. No "processes" was previously recited.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rackoff et al. (hereinafter "Rackoff") (US Patent No. 5574890) in view of Chang et al. (hereinafter "Chang") (US Patent 6,403,389).

Regarding claim 1, Rackoff discloses a test method comprising:

- a) obtaining test measurement values on a device at one or more independent variable values [see Rackoff: col. 10, lines 50-67; and col. 14, lines 21-30];
- b) calculating a goodness of fit value for a fitted curve between:
 - (1) said test measurement values; and
 - (2) the independent variable values;

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[see Rackoff: col. 14, lines 5-20 and lines 31-65]

Rackoff does not disclose "using said goodness of fit value to monitor processes used to form said device." Chang teaches "process monitoring" [see Chang: col. 2, lines 8-30; and col. 3, lines 18-56].

It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to modify the invention of Rackoff to include the process monitoring, as taught by Chang, to determine interconnect process parameters when interconnect structures account for a much smaller portion of the electrical properties of the integrated circuit [see Chang: col. 2, lines 8-30; and col. 3, lines 18-56].

Regarding claim 2, Rackoff discloses wherein step (c) further includes using control limits on the goodness of fit values [see Rackoff: col. 14, lines 66-col.15, lines 1-21].

Rackoff does not disclose "using said goodness of fit value to control processes used to form said device." Chang teaches "process monitoring" [see Chang: col. 2, lines 8-30; and col. 3, lines 18-56].

It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to modify the invention of Rackoff to include the process monitoring, as taught by Chang, to determine interconnect process parameters when interconnect structures account for a much smaller portion of the electrical properties of the integrated circuit [see Chang: col. 2, lines 8-30; and col. 3, lines 18-56].

Regarding claims 3 and 28, Rackoff discloses wherein step (c) further includes using control limits on the goodness of fit values; said control limits established based on a history of goodness of fit values or on device requirements [see Rackoff: Abstract; and col. 14, lines 66-col.15, lines 1-9].

Rackoff does not disclose "using said goodness of fit value to monitor processes used to form said device." Chang teaches "process monitoring" [see Chang: col. 2, lines 8-30; and col. 3, lines 18-56].

It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to modify the invention of Rackoff to include the process monitoring, as taught by Chang, to determine interconnect process parameters when interconnect structures account for a much smaller portion of the electrical properties of the integrated circuit [see Chang: col. 2, lines 8-30; and col. 3, lines 18-56].

Regarding claim 4, Rackoff discloses the goodness of fit value is a correlation coefficient or a standard error measurement [see Rackoff: col. 14, lines 11-20].

Regarding claim 5, Rackoff discloses the fitted curve is a least squares fitted straight lines [see Rackoff: col. 14, lines 11-20].

Regarding claim 6, Rackoff does not disclose the test measurement values are resistance or capacitance measurement values or "using said goodness of fit value to monitor processes used to form said device."

Chang teaches the test measurement values are resistance or capacitance measurement values [see Chang: Abstract; col. 1, lines 16-20; and col. 4, lines 25-43] and "process monitoring" [see Chang: col. 2, lines 8-30; and col. 3, lines 18-56].

It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to modify the invention of Rackoff to include the test measurement values and the process monitoring, as taught by Chang, to increase accurate electrical measurement of the conductor layer's sheet resistivity for use in an integrated circuit design to ensure manufacturability and performance [see Chang: Abstract; col.

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1, lines 16-20; and col. 4, lines 25-43] and to determine interconnect process parameters when interconnect structures account for a much smaller portion of the electrical properties of the integrated circuit [see Chang: col. 2, lines 8-30; and col. 3, lines 18-56].

Conclusion


3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuong Huynh whose telephone number is 571-272-2718. The examiner can normally be reached on M-F: 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc Hoff can be reached on 571-272-2216. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Phuong Huynh
Examiner
Art Unit 2857

PH
March 8, 2007


CAROL S.W. TSAI
PRIMARY EXAMINER